Strategic Goal: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Pollution prevention and risk management strategies aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination will result in cleaner and safer environments in which all Americans can reside, work, and enjoy life. EPA will safeguard ecosystems and promote the health of natural communities that are integral to the quality of life in this nation.

BACKGROUND AND CONTEXT

The diversity and fragility of America's environments (communities, homes, workplaces and ecosystems) requires EPA to adopt a multi-faceted approach to protecting all Americans from the threats posed by pesticide and toxic chemicals. The underlying principle of the activities incorporated under this goal is the application of pollution prevention. Preventing pollution before it does damage is cheaper and smarter than costly cleanup and remediation, as evidenced with Superfund and PCB cleanups. In 1998, facilities reported a total of 10.2 billion pounds of pollutants released, treated or combusted for energy. Reducing waste, and reducing the toxic chemicals that are used in industrial processing, protects the environment and also lowers costs for industry. Pollution prevention involves changing the behavior of those that cause the pollution and fostering the wider use of preventive practices as a means to achieve cost effective, sustainable results.

In Goal 4 the Agency targets certain specific chemicals of especially high risk as well as the full range of pollutants addressed by the pollution prevention program. Many chemicals are particularly toxic to children. Lead, for instance, damages the brain and nervous system and can result in behavioral and learning problems if blood levels are too high. Despite great progress over the last twenty years, there are still over 1 million American children with elevated blood levels of lead. Asbestos, PCB's and other chemicals present in our buildings and in the environment pose risks to anyone exposed as well as to wildlife. For other common chemicals, we simply don't know what, if any, risks are present.

MEANS AND STRATEGY

The Agency mixes both regulatory and voluntary methods to accomplish its job. For example, each year the New Chemicals program reviews and manages the risks of over 2,000 new chemicals and 40 products of biotechnology that enter the marketplace. This new chemical review process not only protects the public from the immediate threats of harmful chemicals, like PCBs, from entering the marketplace but it has also contributed to changing the behavior of the chemical industry, making industry more aware and responsible for the impact these chemicals have on human health and the environment.

This awareness has lead industry to produce safer "greener" alternative chemicals and pesticides. Fewer harmful chemicals are entering the marketplace and our environment today because of the New Chemical Program. Through our Design for the Environment program, EPA forms partnerships with industry to find sensible solutions to prevent pollution.

Much remains to be done to safeguard our Nation's communities, homes, workplaces and ecosystems. Preventing pollution through regulatory, voluntary, and partnership actions - educating and changing the behavior of our citizens - is a sensible and effective approach to sustainable development while protecting our Nation's health.

Preventing pollution through partnerships is central to the Agency's Chemical Right-to-Know initiative in 1999. This new initiative will provide the public with information on the basic health and environmental effects of the 3000 chemicals produced at the highest volumes in the U.S. Most Americans come into daily contact with many of these chemicals, yet relatively little is known about their potential impacts. Basic hazard testing information will be the focus of a high visibility, voluntary challenge program recognizing industry's contribution to the public knowledge base on these prevalent chemicals. Risks to children are a particular focus, and the Agency will supplement the information from industry with additional testing to identify and address any chemicals of special concern for children's health.

Also central to the Agency's work under this goal in 1999 will be increased attention on documenting and taking action to reduce risk from chemicals that persist, bioaccumulate and are highly toxic (PBT's) and from chemicals that have endocrine disruption effects. These chemicals have very high potentials for causing long-term damage to humans and to ecosystems. Accumulating in the food chain, often far from the source of initial exposure, and disrupting the life cycle and creation of healthy offspring, in essence these chemicals produce a multiplier effect that is difficult to halt once it is in action in the environment. Pollution prevention and controlling releases are the mainstays of protection, once these chemicals are correctly identified.

Under this Goal, EPA ensures that pesticide use not only results in safe food, but also causes no unnecessary exposure either to human health or to natural ecosystems. In addition to the array of risk-management measures entailed in the registration authorities under FIFRA for individual pesticide ingredients, EPA has specific programs to foster worker and pesticide-user safety as well as ground-water protection, and the Agency fosters the safe, effective use of anti-microbial agents. EPA works to ensure the comprehensive protection of non-target organisms and endangered species in particular, and to reduce the contribution of pesticides to specific ecological threats such as endocrine disruption or pollutant loading in geographic areas.

EPA also pursues a variety of field activities at the regional, state and local levels, including the promotion of pesticide environmental stewardship programs with user groups as partners. Finally, EPA promotes the use of sensible Integrated Pest Management (IPM) and the prevention of misuse in both the urban and rural environments.

In several cases achieving the strategic objectives under this goal is a shared responsibility with other federal agencies. For example EPA=s role in reducing the levels of environmental lead exposure involves promotion of federal-state partnerships to lower specific sources of environmental lead, such as lead-based paint and other lead-content products.

These partnerships emphasize public education and empowerment strategies, which fit into companion federal efforts (e.g., HHS and the Centers for Disease Control; HUD) to monitor and reduce environmental lead levels. Likewise, the results of EPA=s efforts to reduce indoor air exposures are measured by public-health agencies.

EPA focuses on specific agents (e.g., radon), on general categories of indoor facilities (schools, homes and workplaces), and on the characteristic risks presented in each category.

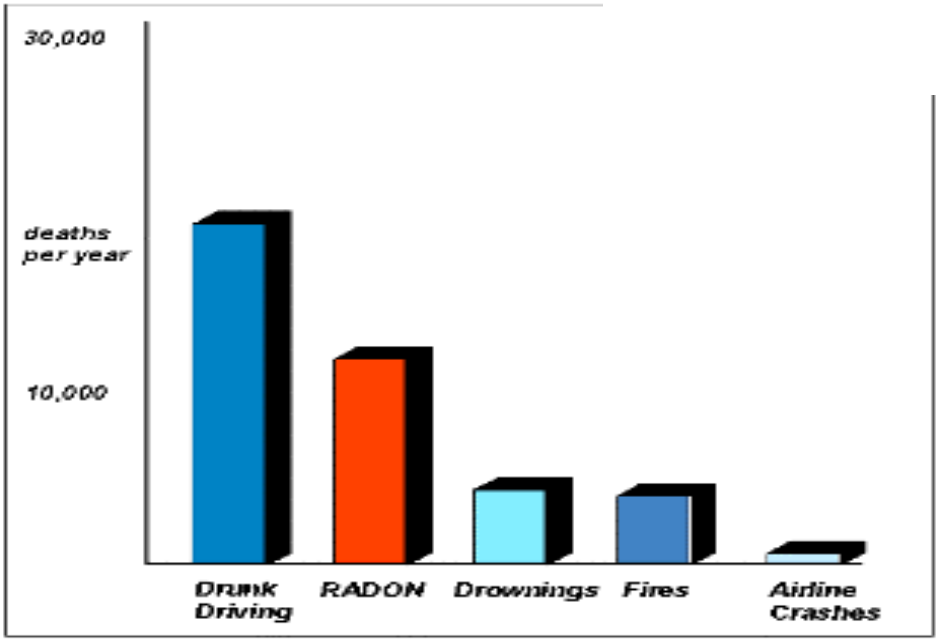
Intrinsic to the effort to prevent pollution is the minimization of the quantities of waste generated by industry, municipalities and hazardous-waste management operations. Strategies range from fostering recycling and other resource-recovery processes to broad-based campaigns to re-engineer the consumption and use of raw materials or personal conservation of resources.

This Goal focuses on how Americans live in communities and features the particular commitment of promoting environmental protection in Indian country, as consistent with our trust relationship with tribes, and is cognizant of the Nation=s interest in conserving the cultural uses of natural resources.

Research

The human health and ecosystems research included in this objective is designed to provide direct support to EPA's regulatory program for pesticides and toxic substances. The information developed from application of human health research will significantly increase understanding of the impacts of specific pesticides and toxic substances on human health.

Ecosystems research will help EPA develop the evaluative effects methods that are used in the regulation of toxic substances, including pesticides, in ecosystems. Test methods developed through this research program are incorporated in the existing compendium of test methods used to support Agency regulatory requirements.



Radon is estimated to cause about 14,000 deaths per year. However, this number could range from 7,000 to 30,000 deaths per year. The numbers of deaths from other causes are taken from 1990 National Safety Council reports.

STATUTORY AUTHORITY

- Clean Air Act (CAA) section 309 (42 U.S.C. 7609)
- Clean Water Act (33 U.S.C. 1251-1387)]
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42
- Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050)
- Federal Food, Drug and Cosmetic Act (FFDCA)
- Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)
- Indian General Assistance Program (GAP) Act as amended (42 U.S.C. 4368b)
- Pollution Prevention Act (PPA)
- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k)
- Safe Drinking Water Act sections 1412 and 1417 (42 U.S.C. 300g-1, 300g-6)
- Solid Waste Disposal Act as amended by the Hazardous and Solid Waste Amendments of 1984.
- Superfund Amendments and Reauthorization Act of 1986 (SARA) Title IV, ARadon Gas and Indoor Air Quality Research Act@
- Toxic Substances Control Act (TSCA)

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems	**$259,721.3**	**$237,789.8**
Reduce Public and Ecosystem Exposure to Pesticides	$48,998.9	$43,178.2
EPM	$35,020.7	$29,219.0
S&T	$863.6	$844.6
STAG	$13,114.6	$13,114.6
Reduce Lead Poisoning	$30,844.6	$30,817.4
EPM	$17,132.4	$17,105.2
STAG	$13,712.2	$13,712.2
Safe Handling and Use of Commercial Chemicals and Microorganisms	$44,750.6	$42,443.2
EPM	$32,007.1	$31,206.6
S&T	$12,743.5	$11,236.6
Healthier Indoor Air	$34,017.6	$29,629.4
EPM	$20,874.7	$16,662.1
S&T	$4,984.9	$4,809.3
STAG	$8,158.0	$8,158.0
Improve Pollution Prevention Strategies, Tools, Approaches	$26,829.8	$21,884.0
EPM	$20,830.3	$15,884.5
STAG	$5,999.5	$5,999.5
Decrease Quantity and Toxicity of Waste	$23,429.1	$18,852.5
EPM	$22,350.3	$15,779.5
STAG	$1,078.8	$3,073.0
Assess Conditions in Indian Country	$50,850.7	$50,985.1
EPM	$8,265.3	$8,399.8
STAG	$42,585.4	$42,585.3
Total Workyears:	1,122.8	1,126.7

Strategic Objective: Reduce Public and Ecosystem Exposure to Pesticides

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Pesticide Registration	$10,253	$7,451
Pesticide Re-registration	$4,860	$4,856
Endocrine Disruptor Screening Program	$268	$268
Agricultural Worker Protection	$4,769	$4,365
Pesticide Applicator Certification and Training	$5,516	$5,314
Pesticides Program Implementation Grant	$13,115	$13,115

Annual Performance Goals and Measures

PESTICIDES AND POLLUTANTS REDUCTION

By 1999: Protect homes, communities, and workplaces from harmful exposures to pesticides and related pollutants through improved cultural practices and enhanced public education, resulting in a reduction of 10% (1995 reporting base) in the incidences of pesticide poisonings reported nationwide.

Performance Measures:	**Target:**
Reduce Workers Suffering from Adverse Health Effects	15% Health Effects
Labor Population will be adequately trained	38% Trained

Baseline: 1995 reporting for adverse effects data and for number of workers trained. Stewardship figures are cumulative. Baseline for ground water contamination managed is under development.

Strategic Objective: Reduce Lead Poisoning

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Lead Risk Reduction Program	$16,929	$16,911
Grants to States for Lead Risk Reduction	$13,712	$13,712

Annual Performance Goals and Measures

LEAD-BASED PAINT TRAINING

By 1999: Complete the building of a lead-based paint abatement certification and training program in 50 states to ensure significant decreases in children's blood lead levels by 2005 through reduced exposure to lead-based paint.

Performance Measures:	**Target:**
State programs approved for the training, accreditation and certification of lead-based paint abatement professionals.	35 States
Federal training/accred./certif. Program for States	15 Programs

Baseline: Number of states in which either federal or state program will be established.

Strategic Objective: Safe Handling and Use of Commercial Chemicals and Microorganisms

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Endocrine Disruptor Screening Program	$1,600	$1,257
New Chemical Review	$14,140	$13,410
Existing Chemical Data, Screening, Testing and Management	$12,491	$12,870
National Program chemicals: PCBs, Asbestos, Fibers, and Dioxin	$3,301	$3,012

Annual Performance Goals and Measures

CHEMICAL AND MICROORGANISM SAFETY

By 1999: Ensure that of the approximately 1,800 new chemicals and microorganisms submitted by industry each year, those that are introduced in commerce are safe to humans and the environment for their intended uses.

Performance Measures:	**Target:**
TSCA PMN Reviews	1,800 Notices

Baseline: Expected number of chemicals to be submitted in 1999.

Strategic Objective: Healthier Indoor Air

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
State Radon Grants	$8,158	$8,158
Indoor Environments: ETS	$1,183	$1,050
Indoor Environments: Schools	$6,789	$2,921
Indoor Environments : Asthma	$2,589	$1,136
EMPACT	$905	$0
Research: Indoor Air Research	$3,012	$2,836

Annual Performance Goals and Measures

HEALTHIER RESIDENTIAL INDOOR ENVIRONMENTS

By 1999: 700,000 additional people will live in healthier residential indoor environments.

Performance Measures:	**Target:**
People Living in Healthier Indoor Air	700,000 People

Baseline: 1. The baseline for people living in homes built with radon resistant features is 600,000 in 1994. 2. The baseline for the number of children exposed to ETS is 19,500,000 in 1994. 3. The baseline for the number of people living in radon mitigated homes is 780,000 in 1994.

Strategic Objective: Improve Pollution Prevention Strategies, Tools, Approaches

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Design for the Environment	$4,844	$4,554
Pollution Prevention Program	$9,676	$5,896
Pollution Prevention Incentive Grants to States	$6,000	$6,000
Common Sense Initiative	$1,179	$429

Annual Performance Goals and Measures

TRI POLLUTANTS REDUCTION

By 1999: The quantity of Toxic Release Inventory pollutants released, treated or combusted for energy recovery will be reduced by 200 million pounds, or two percent, from 1998 reporting levels.

Performance Measures:	**Target:**
Reduction of TRI pollutants released	2% Releases

Baseline: Previous end level for reduction reported in most recent TRI data (1997).

Strategic Objective: Decrease Quantity and Toxicity of Waste

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
RCRA State Grants	$1,079	$3,073
Waste Minimization	$2,399	$2,195
Source Reduction	$5,505	$2,729
Recycling	$5,489	$4,981
Urban Environmental Quality and Human Health	$220	$0
Common Sense Initiative	$1,782	$634

Annual Performance Goals and Measures

MUNICIPAL SOLID WASTE

By 1999: Maintain levels (for a cumulative total of 28% or 62 million tons) of municipal solid waste (MSW) diverted from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.3 pounds per day.

Performance Measures:	**Target:**
Millions of tons of municipal solid waste diverted.	62 tons MSW
Daily per capita generation of municipal solid waste.	4.3 lbs. MSW

Baseline: 1990 levels established at 17% of MSW diverted and 4.3 pounds MSW per capita daily generation.

Strategic Objective: Assess Conditions in Indian Country

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Tribal General Assistance Grants	$42,585	$42,585

Annual Performance Goals and Measures

TRIBAL AGREEMENTS

By 1999: 10% of Tribal environmental baseline information will be collected and 10 additional tribes (cumulative total of 45) will have tribal/EPA environmental agreements or identified environmental priorities.

Performance Measures:	**Target:**
Tribal environmental baseline information collected	10% Baseline
Tribes with identified priorities	10 Tribes

Baseline: EPA completed the design of a system to collect and manage data on environmental conditions in Indian country at the end FY 1998. The data assessment process will be initiated in FY 1999. In 1998, a total of 35 tribes had EPA/Tribal Environmental Agreements or similar plans.

EXTERNAL FACTORS

The ability of the Agency to achieve its strategic goals and objectives depends on several factors over which the Agency has only partial control or little influence. EPA relies heavily on partnerships with states, tribes, local governments and regulated parties to protect the environment and human health. In addition, EPA assures the safe use of pesticides in coordination with the USDA and FDA, who have responsibility to monitor and control residues and other environmental exposures. EPA also works with these agencies to coordinate with other countries and international organizations with which the United States shares environmental goals. This plan discusses the mechanisms and programs that the Agency employs to assure that our partners in environmental protection will have the capacity to conduct the activities needed to achieve the objectives. However, as noted, EPA often has limited control over these entities. In addition, much of the success of EPA programs depends on the voluntary cooperation of the private sector and the general public.

EPA=s ability to achieve the goals and objectives is also predicated on an adequate level of resources for direct program implementation by EPA as well as for delegated programs. The objectives in this plan are based on current funding levels. If appropriations are lower or different from requested, some objectives may be difficult or impossible to achieve. Other factors that could delay or prevent the Agency=s achievement of some objectives include: lawsuits that delay or stop EPA=s and/or State partners= planned activities; new or amended legislation; and new commitments within the Administration. Economic growth and changes in producer and consumer behavior, such as shifts in energy prices or automobile use, could have an influence on the Agency=s ability to achieve several of the objectives within the timeframe specified.

Large-scale accidental releases (such as large oil spills) or rare catastrophic natural events (such as volcanic eruptions) could, in the short term, impact EPA=s ability to achieve the objectives. In the longer term, new environmental technology, unanticipated complexity or magnitude of environmental problems, or newly identified environmental problems and priorities could affect the timeframe for achieving many of the goals and objectives. In particular, pesticide use is affected by unanticipated outbreaks of pest infestations and/or disease factors, which require EPA to review emergency uses to ensure no unreasonable risks to the environment will result. EPA has no control over requests for various registration actions (new products, amendments, uses, etc.), so its projection of regulatory workload is subject to change.

Success in improving indoor air quality depends upon the work of many federal and state agencies, and ultimately on the Agency=s ability to provide useful information to individuals so that they may intelligently identify and avert risks to health in the household, workplace, schools and other indoor settings.

In the absence of regulatory authority and grants to states for indoor environment programs, the voluntary Federal indoor environments program relies heavily on state and local, private, and non-profit partnerships to implement and manage indoor environmental risk reduction activities/programs. Many of our partners and states have small programs that often make it difficult to achieve the desired level of results.

The Agency=s ability to achieve its objective of decreasing the quantity and toxicity of waste could be impacted by the increased flexibility provided to states to redirect resources under the National Environmental Performance Partnership System

(NEPPS). If states redirect resources away from this area, it would impact both annual performance and progress in implementing the Agency=s strategic plan. To mitigate this potential issue, EPA is working with the Environmental Council of States (ECOS) to develop core measures beyond FY 1998 and coordinating with states to develop, for example, the RCRA Persistent, Bioaccumulative, and Toxics (PBT) list and other tools that will focus state activities on shared EPA and state goals.

In addition, recycling rates are affected by shifts in prices and potential regulatory changes to reduce or eliminate disincentives to safe recycling. While market forces have helped to achieve current rates, better markets for recycled products/recyclables/reusables are needed to encourage increased recycling rates and source reduction. EPA has worked with the Chicago Board of Trade and the Federal Environmental Executive and has several other ongoing projects that encourage market development.

Achieving our objective is based upon a partnership with Indian Tribal governments, many of which face severe poverty, employment, housing and education issues. Because Tribal Leader and environmental director support will be critical in achieving this objective, the Agency is working with Tribes to ensure that they understand the importance of having good information on environmental conditions in Indian country to meet their and EPA needs. In addition, EPA also works with other Federal Agencies, Department of Interior (U.S. Geological Survey, Bureau of Indian Affairs, and Bureau of Reclamation), National Oceanic and Atmospheric Administration, and the Corps of Engineers to help build programs on tribal lands. Changing priorities in these agencies could adversely affect their ability to work with EPA in establishing strategies and regulations that affect Indian Tribes.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Reduce Public and Ecosystem Exposure of Pesticides

The performance measures for this objective are program outputs for the Field and Environmental Stewardship programs and are used as an indirect measure of reducing risk. The number of workers suffering from adverse effects of pesticides may be derived from various sources such as poison control center data, public health system data, information gathered from the states and public health agencies. The labor population training data may be determined using information from USDA and States. The pesticides considered to be threats to groundwater have been identified and will be used as the base.

Reduce Lead Poisoning

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed, compliance with regulatory development and authority delegation schedules, and the satisfaction of U.S. environmental negotiating objectives.

The accomplishment of EPA=s broader lead poisoning reduction goals (e.g., lead rule promulgation, certified training programs, completed technical reports, etc.) will be verified by realizing a significant reduction of children=s blood lead levels compared to levels in the 1970's. For the past two decades, the National Center for Health Statistics (NCHS) has collected data on the general health of the Nation=s population through the National Health and Nutrition Examination Survey (NHNES). The collection and laboratory analysis of children=s blood for lead has been part of this program since its inception and has become the standard for the estimation of national blood lead averages. It is also the only national survey of children=s blood lead levels.

NCHS is preparing to begin another survey. The results, scheduled for release in 2002, will be used to measure the success of EPA=s lead program. The verification and validation of data from NHNES will be conducted by NCHS through a rigorous quality assurance program to ensure that the sample selected for examination is truly representative of the U.S. population and that laboratory analyses of collected blood samples are of known accuracy and precision. (NCHS has over 20 years experience in conducting this survey and these analyses.)

In addition, EPA will evaluate the effectiveness of regulations previously promulgated. Through mechanisms including focus groups and surveys, the Agency will measure the awareness and any changes in behavior of the regulated community as a result of these regulations.

For example, at the end of 1998, EPA will have established a training, certification, and accreditation program for lead-based paint professionals in states that do not seek approval from the Agency to administer their own program (about 15-20 states are not expected to seek authorization). For more information: (http://www.epa.gov/opptintr/lead/leadcert.htm). In 1999, following an outreach effort to increase awareness of state residents on EPA=s certification program, the Agency will measure the success of this regulation in certifying professionals.

The success will be determined by the degree of awareness of the program among professionals who are likely to become certified. Similar evaluations will be developed for other regulations.

Safe Handling and Use of Commercial Chemicals and Microorganisms)

Performance will be measured by the number of new chemicals Pre-Manufacture Notice submissions (PMN=s) that are determined by EPA to be safe and not to require EPA management controls. PMN=s submissions and determinations are tracked under formal EPA document management and decision-making systems to ensure compliance with statutory deadlines for Agency action. The Agreener@ the new chemical EPA receives for review, the more success achieved in protecting human health and the environment. Performance will also be measured by how much knowledge we gain in understanding the risks of toxic chemicals to human health and the environment. EPA will gain this knowledge through required and voluntary chemical testing by industry. When EPA identifies specific risks posed by toxic chemicals, performance will be judged by its success to mitigate through actions such as labeling or banning of the chemical or its use in certain products. These counts will be drawn from formal regulatory action tracking systems maintained by EPA that have thorough QA/QC procedures to ensure the integrity of the data maintained therein. Last, success will be judged by lowering risk through preventing pollution and achieving this through voluntary compliance over regulated controls.

The Chemical Right-to-Know (CRTK) initiative and the Endocrine Disruptor screening and testing project (http://www.epm.gov/endocrine) are both major efforts EPA is undertaking to ensure commercial chemicals are adequately tested for health and environmental effects and that this data is available to the public. Performance of the CRTK initiative can easily be measured by tracking the number of chemicals for which EPA has received commitments to complete screening-level testing from chemical manufacturers and by tracking the number of chemicals covered by regulations requiring chemical testing. Verification of program performance for the Endocrine Disruptor screening and testing program can be determined by tracking the number of chemicals that have been tested by EPA with the recommended protocols.

EPA has several strategies to validate and verify performance measures in the area of environ-mental science and research. The Agency has implemented a risk-based research planning process to use risk assessment and risk management as principle priority-setting criteria. EPA conducts annual research program reviews to both evaluate the status and accomplishments of its research, and to determine planning priorities.

Chief among the Agency=s validation and verification mechanisms is a rigorous peer review process. In a July 1997 memorandum, EPA=s Deputy Administrator states that peer review will be expanded Ato include both the major work products provided in the past and Y all scientific and technical products supporting Agency decisions...@. This expanded and strengthened focus on peer review will help ensure that the performance measures listed here are verified and validated by external organizations. The Agency utilizes peer review throughout the research planning and implementation process, both to ensure that planned research addresses critical knowledge issues within EPA=s mission and to assess the quality of scientific research plans, products, and proposals. This is accomplished through the use of independent entities.

The Office of Research and Development Management Information System (OMIS) will beanother accountability tool used to verify and validate performance measures. The recently developed GPRA structure will be incorporated into OMIS to ensure consistent maintenance and reporting, resulting in greater accuracy and consistency of information to users.

Healthier Indoor Air

Radon

Progress on the number of homes tested for radon and the number of homes fixed if levels are elevated is assessed under a cooperative agreement between EPA and the Conference of Radiation Control Program Officials (CRCPD). CRCPD conducts a biennial telephone survey of randomly selected households in which the primary decision maker is asked questions which include their awareness of radon, whether they have tested their home for radon, whether they have taken steps to mitigate elevated levels of radon, whether there are children aged six and under in the home, and if so, whether smoking goes on inside the home. The study is performed by CRCPD for its own uses, and quality control and assurance procedures are the responsibility of CRCPD and its survey contractor. The Agency survey of the radon industry will determine the amount of residential testing and mitigation completed by radon service providers (http://www.epm.gov/iag). This survey will supplement the residential telephone survey, and will be conducted by EPA and its contractor. Quality assurance and control procedures will be designed in accordance with Agency standards. The Agency purchases the results of an annual survey of home builders which assesses the extent to which residential builders are employing radon-resistant construction techniques. Quality assurance and control procedures are the responsibility of the National Association of Home Builders.

ETS

To ascertain the number of children aged 6 and under exposed to ETS in their homes, the program utilizes the biennial survey conducted by the Conference of Radiation Control Program Directors, as described above. In addition, the Agency uses the Department of Health and Human Services National Health Interview Survey, which poses a similar question to a national sample of households, as a check on the accuracy of the CRCPD study results.

Schools

The number of schools that implement the Indoor Air Quality (IAQ) ATools for Schools@ kit is tracked through a centralized database where data are provided by program office staff, the Government Printing Office, national cooperative partners, contractor staff, and the EPA regional offices, (http://www.epa.gov/iag/schools/index.html). The accuracy of this database is dependent upon the reliability of personnel filling out the information form and their understanding of the steps taken in their school(s) to implement EPA=s multi-step guidance. Because this is a voluntary program, the Agency has no authority to verify the accuracy or comprehensiveness of information provided by school personnel. In addition, the program accesses the National Association of Energy Service Companies database which tracks companies that have performed ventilation work in schools as well as public school student enrollment numbers.

Improve Pollution Prevention Strategies, Tools, Approaches

Toxics Release Inventory (TRI) data:

Industrial facilities in specified Standard Identification Codes (SIC) are required to provide TRI data for chemicals listed by law or regulation. The data are estimates by the reporting facility of the quantities of toxic chemicals in production-related wastes that are released to the environment (including disposed of, used for energy recovery, recycled or treated). Facilities also must report quantities that are released or managed as waste off-site as a result of remedial actions, catastrophic events, or one-time events not associated with production processes. In 1999, nearly 28,000 facilities are expected to provide TRI data.

The source reduction performance measure (see Goal #1, above) relies on data reported by industrial facilities (on TRI Form R=s) regarding any source reduction activities undertaken by the facilities during the reporting year, and the methods used to identify these activities. Facilities select the methods they use to estimate the reported quantities, and the validity of the data depends on proper selection and application of the estimation methods as well as on the quality of the available data.

EPA conducts data quality site surveys to identify aspects of the TRI data reporting process that could be improved and to provide a quantitative assessment of the accuracy of data collected (http://www.epa.gov/opptintr/tri). The latest survey, completed in 1998, showed that errors in reporting source reduction activities varied by industry sector and resulted primarily from misinterpretations (by facilities) of key terms, particularly Asource reduction.@ The survey also suggested that source reduction activities may be somewhat under-reported through TRI, since the results of such activities are not subject to TRI reporting (hence there is less incentive to disclose the activities), and for other reasons.

The Agency is preparing additional guidance to assist facilities in preparing their Form R=s. This guidance will focus on the reporting elements required by the Pollution Prevention Act of 1990 and should be issued in the year 2000.

In addition to those facilities reporting under TRI, EPA will utilize data from a variety of sources. EPA=s PBT program expects to draw upon National Health and Nutrition Exam Survey (NHANES) data, Integrated Atmospheric Deposition Network (IADN) monitoring data, a fetal cord monitoring study, and an EPA Office of Water (OW) fish tissue study, as these data sources become available. EPA=s Design for Environment Program conducts an evaluation of the extent to which cleaner technologies have been adopted by each industry that takes part in the program. This can be as simple as collecting data on the amount of a particular chemical used within an industry (for example, perchloroethylene used in drycleaning) or as challenging as surveying an industry's overall progress in installing newer, less polluting processes. Survey participants are typically small to medium-sized firms. While no single central database depository exists for all survey results, findings are frequently documented and incorporated to produce outreach materials for industry.

Decrease Quantity and Toxicity of Waste

Data for RCRA performance measures under this objective are tracked through a variety of systems, ranging from national databases managed by EPA to voluntary reporting from program partners to information collected by the Commerce Department. In all instances appropriate verification and validation procedures are in place (http://www.epa.gov/epaoswer/osw/index.htm).

Monitoring national progress in reductions of PBTs will rely heavily on the Toxics Release Inventory (TRI) for establishing a baseline for tracking annual performance and measuring the reductions of a specific list of PBT chemicals in hazardous waste. The regulated industry reports the TRI data, and the Agency receives the reports and enters the data directly into the TRI. All applicable validation controls are in place for the TRI system.

Although there are some chemicals on this list that are not included in TRI reporting in 1991, some of these chemicals were either required to be reported in 1995 or will be added to the TRI in an upcoming rulemaking that expands reporting and lowers the reporting threshold for certain chemicals. There still remains a subset of chemicals (very small in number) that we will not have TRI information on. For these chemicals, EPA plans on using the Biennial Reporting Information, the 1986 RCRA Generator Survey, the National Hazardous Waste

Constituent Survey (1996), and the RCRA Waste Code Crosswalk to establish a baseline.

Limitations of the TRI include: 1) not all sectors that generate hazardous wastes report in the TRI; and, 2) information that is reported is not directly related to the RCRA program. However these limitations are not of great concern. Although all sectors that generate hazardous wastes do not report in TRI, the majority of waste (as discovered through analysis of Biennial Report System data) is generated by those sectors that do report to TRI and are the most consistent reporters in BRS as well as TRI. Secondly, although information reported in the TRI is not directly related to RCRA, EPA is able to identify those reporters in TRI that are also generators of hazardous wastes. Both these limitations are far outweighed by the strengths in TRI: 1) that data is collected annually and therefore will provide us with more trend analyses; 2) that data is collected not on waste streams, but on chemicals; and 3) that improvements currently are being made to the systems and the reporting universe is expanding, including more reporting of use and release of chemicals of concern for which we have limited information. An upcoming TRI rulemaking will expand reporting of some chemicals and lower the report threshold of others. This will fill in some of the data limitations identified above.

Tracking the rate of recycling for hazardous waste will use information in the Biennial Reporting System (BRS), a national database which supports EPA=s RCRA program. BRS is a biennial compilation of information supplied by hazardous waste handlers and provides data on types and amounts of waste handled, as well as how the waste is handled (e.g., disposed, recycled). EPA will track progress on increase of hazardous waste safely recycled using the BRS. The regulated industry reports the BRS data, and states and EPA regions quality check the data and enter it into the data base.

The BRS data system has validation/verification controls in place to help ensure that data is complete and accurate. The BRS data entry software includes a series of basic and advanced edits which check for completeness and accuracy. Additionally, while states and EPA regions submit essentially complete BRS databases, EPA Headquarters runs BRS data quality verification reports and then coordinates with states and EPA regions to discuss potential data errors. Analysis also is conducted on significant changes which have occurred since the last biennial report. Prior to issuing the final BRS report, a second set of BRS data quality verification reports are run and follow-on discussions to verify/validate data are conducted for those states with significant changes. BRS has a suite of user and system documentation which describes the overall administration of the data collection and management activities. The documentation identifies which information, for example, is mandatory versus optional and describes how to enter the data into the system. All information is provided to the appropriate state and EPA regional user of the system. Training on use of the systems is provided on a regular basis, usually annually depending on the nature of system changes and user needs.

In February 1997, EPA=s Office of the Inspector General performed an audit of the Biennial Hazardous Waste Data. They made several recommendations which the Agency has acted on.

A limitation of the data available in BRS is that when a facility modifies its recycling or handling operation thereby becoming excluded from the definition of solid waste and/or changes its regulatory status so that future reporting is not required, that facility need no longer submit a biennial report. However, that same facility could still be recycling hazardous waste. This type of change may lead to an underestimating of the amount of hazardous waste safely recycled. The Agency is monitoring BRS submissions to identify facilities that reported in the previous cycle but not in the current cycle. EPA will use various analytical means to determine why reporting, either by the

facility as a whole or of a particular waste stream, stopped.

Extensive improvements are underway for the RCRA national databases. The OSW Platform Conversion of national systems (Resource Conservation and Recovery Act Information System and BRS) will migrate data and interfaces to a more supportable database platform, using Internet based access methods. While the converted systems will retain the essential data characteristics of the current systems, the platform conversion will provide new user interfaces that will help improve the quality of the data as it is being created. In the longer term, the RCRA program currently is in the process of reinventing its information management needs and systems through a joint initiative with the states called WIN/INFORMED.

In the non-hazardous waste program, no national databases are in place nor planned. The baseline numbers for municipal solid waste source reduction and recycling are developed using a materials flow methodology employing data largely from the Department of Commerce and can be found in an EPA report titled ACharacterization of Municipal Solid Waste in the United States.@ The report, including the baseline numbers and current progress, is widely accepted among experts. Since the report is produced by EPA, no reporting from outside sources will be required. Quality assurance and quality control is provided by the Department of Commerce=s internal procedures and systems. The report prepared by the Agency is then reviewed by a number of experts for accuracy and soundness.

Data limitations stem from the fact that the baseline and annual progress numbers are based on a series of models, assumptions, and extrapolations and, as such, is not an empirical accounting of municipal solid waste generated or recycled. Since these numbers are widely reported and accepted by experts, no new efforts to improve the data or the methodology have been identified.

Assess Conditions in Indian Country

The Agency biannually updates an internal database on the number of Tribes with delegated/approved environmental programs; the number of tribal environmental programs that EPA has delegated/approved; the number of Tribal/EPA Environmental Agreements; and the number of Tribes that have developed similar plans for environmental protection. The database is validated against Agency Headquarters and Regional office records (http://www.epa.gov/indian/Programs.htm).

The Agency will work with its Indian Tribal partners to collect baseline environmental information as part of the overall strategy for conducting comprehensive environmental assessments in Indian Country. This information will allow EPA and Tribes to better gauge the environmental outcomes of our partnership for public health and environmental protection. Much of the information for the baseline assessment will come from existing EPA data sources and will conform to Agency quality assurance standards. New data provided by the tribes or collected specifically for the baseline assessment project will be subject to QA/QC review.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Most performance measures are verifiable through quantitative means. For those measures that are output-oriented, actual outputs or products can be objectively verified. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to the validation and verification strategies is the performance of both peer and quality assurance reviews.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental

science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA.

This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.